

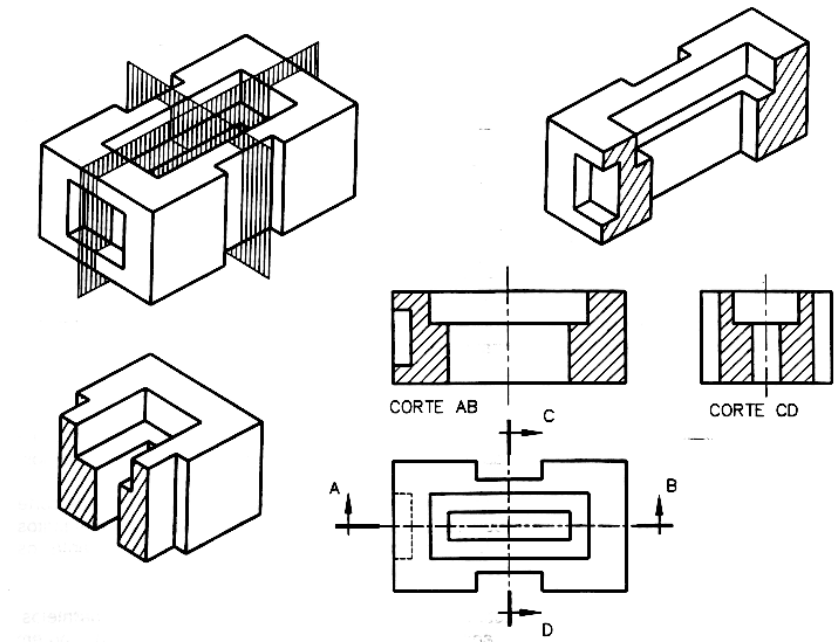
DESENHO TÉCNICO MECÂNICO I

Aula 04 – Cortes, hachuras, semi-cortes

CORTE

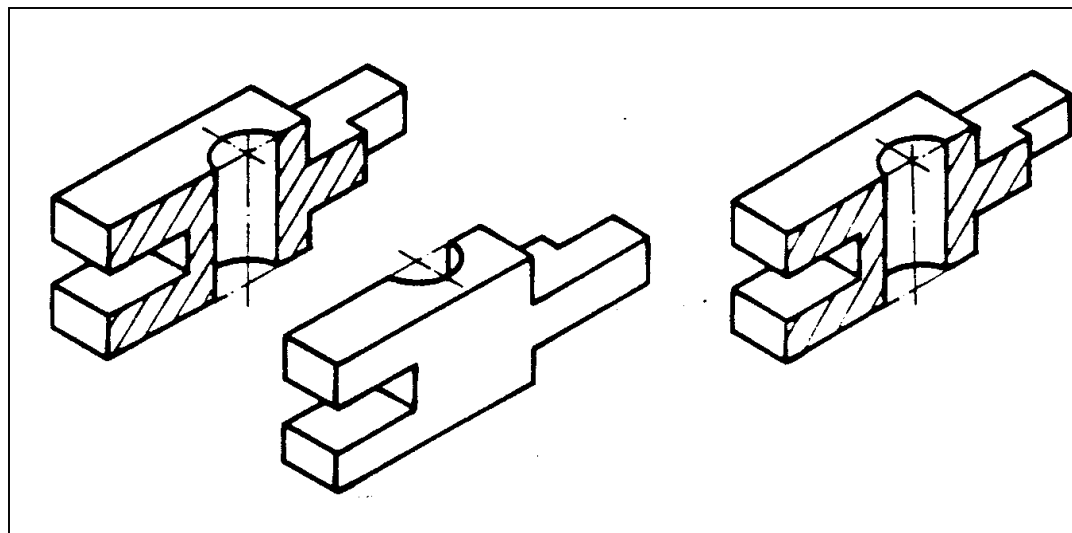
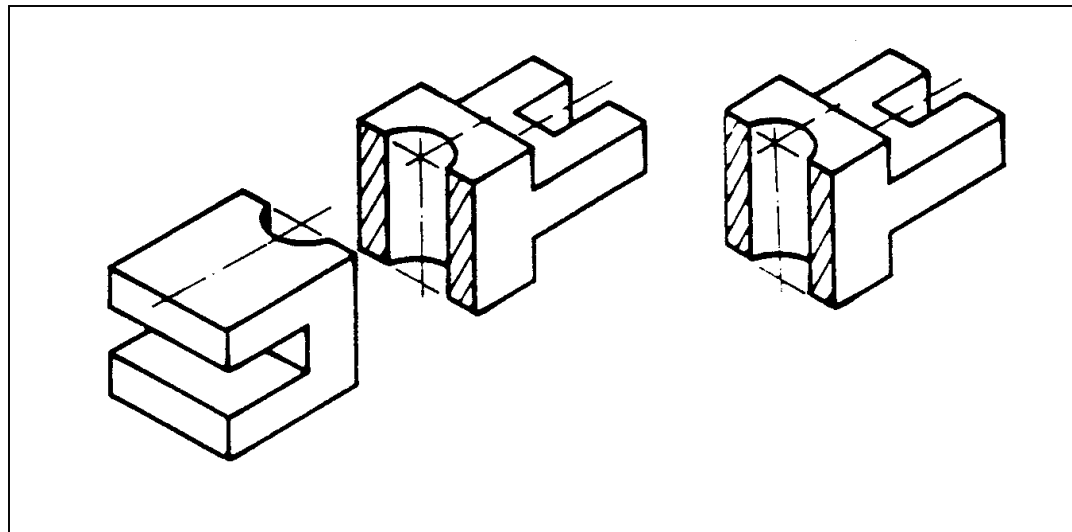
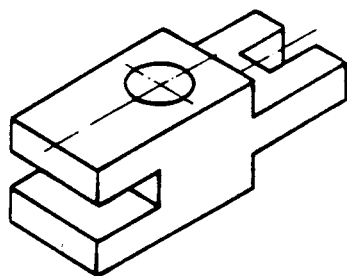
Corte é a denominação dada à representação de um produto seccionada por um ou mais planos virtuais (planos secantes). No corte se representa tudo o que está atrás do plano secante, sendo que as linhas que estavam invisíveis nas vistas ortogonais passam a ficar visíveis.

É um recurso muito utilizado para representar mais efetivamente detalhes internos de componentes ou montagens.



Imagens: Leitura e Interpretação de Desenho Técnico Mecânico. Mecânica. Telecurso 2000.

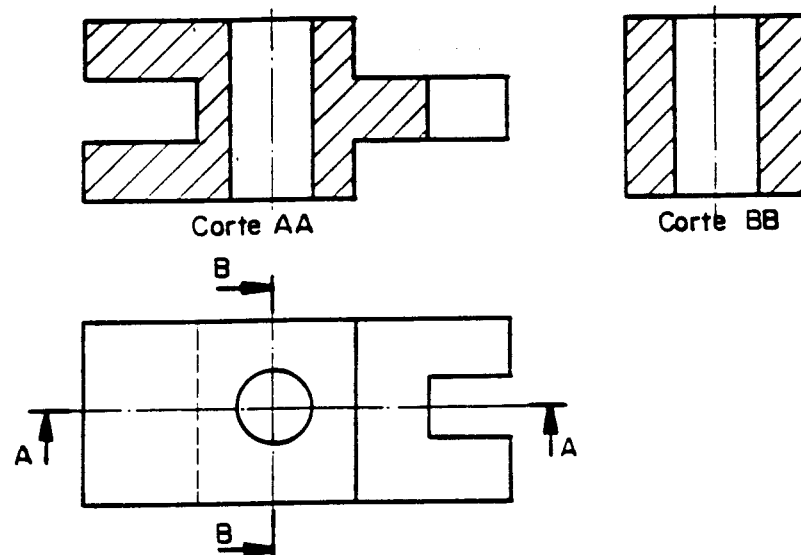
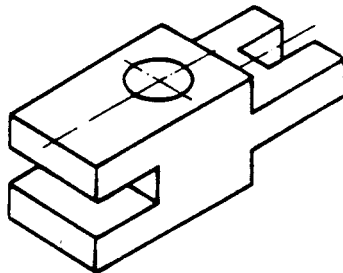
CORTE



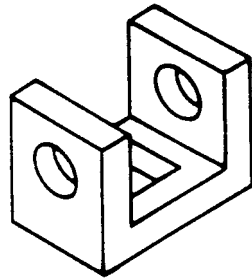
CORTE

Identifica-se o sentido de observação com setas acompanhadas de letras

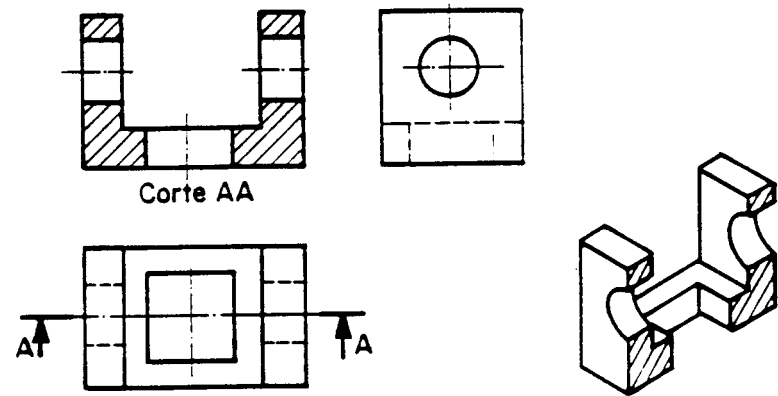
- A expressão corte AA é colocada abaixo da vista hachurada;
- As vistas não atingidas pelo corte permanecem com todas as linhas;
- Na vista hachurada, as linhas tracejadas podem ser omitidas desde que isto não dificulte a leitura do desenho



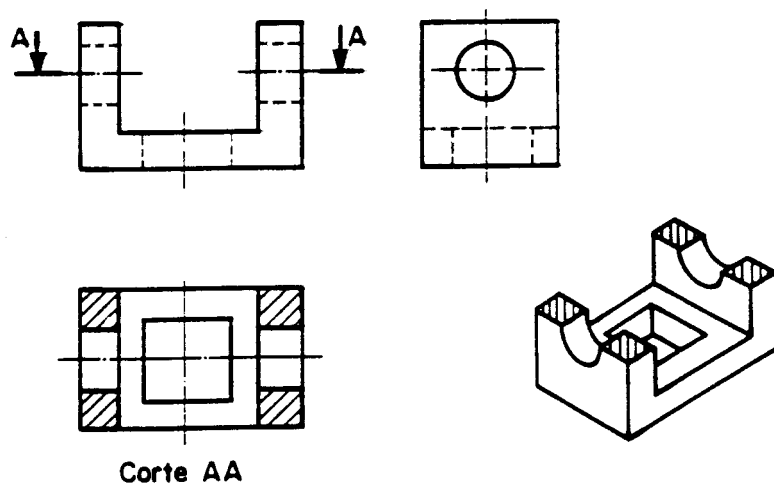
CORTE



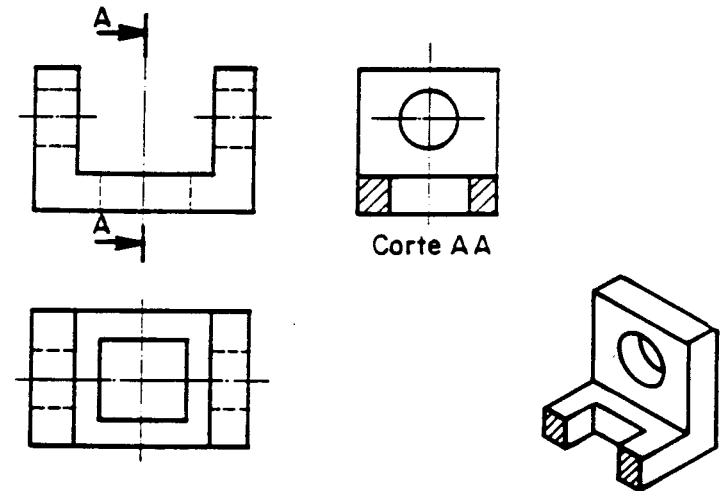
Corte na vista frontal



Corte na vista superior

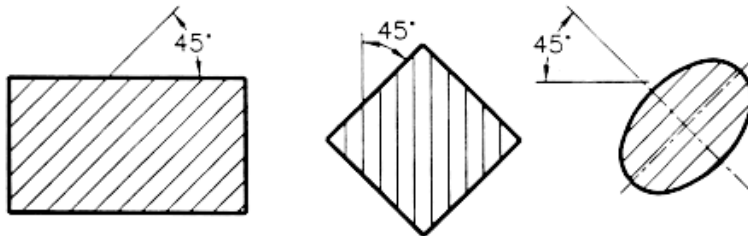


Corte na vista lateral esquerda



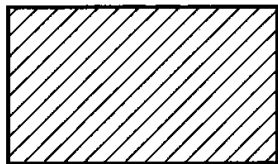
HACHURAS

Na projeção em corte, a superfície imaginada cortada é preenchida com hachuras que são linhas estreitas geralmente traçadas a 45° , porém em alguns casos é permitido uma inclinação de 30° .

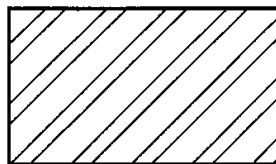


HACHURAS

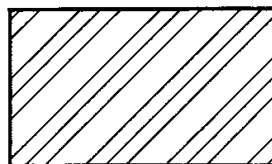
As hachuras também mostram os tipos de materiais; embora se utilize atualmente apenas a de ferro fundido, independentemente do material.



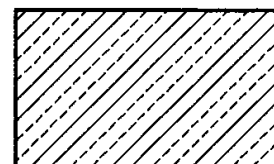
Metal em geral
(cinzento)



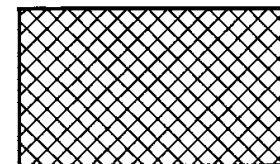
Ferro fundido
(azul)



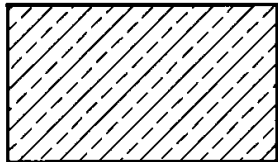
Ferro forjado
(lilás)



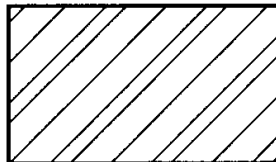
Metal branco
(lilás-claro)



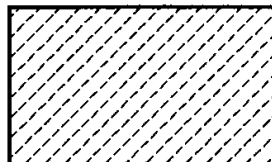
Cortiça, couro
(sépia)



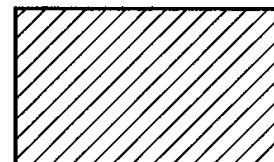
Cobre e ligas
(laranja)



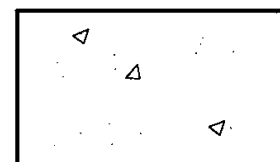
Aço inox
(lilás)



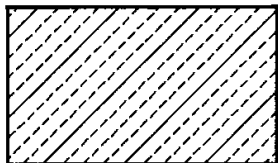
Pedra artificial
(cinzento)



Cerâmicas resist.
(vermelho)



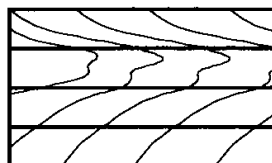
Concreto
(cinzento)



Alumínio, magnésio
(verde)



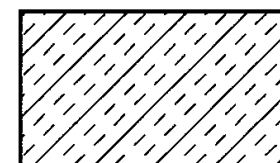
Madeira
(laranja)



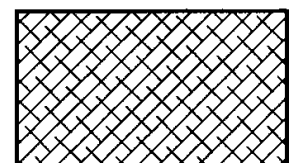
Contraplacado
(laranja)



Aglomerados madeira
(laranja)



Estanho, chumbo
e zinco
(verde-claro)



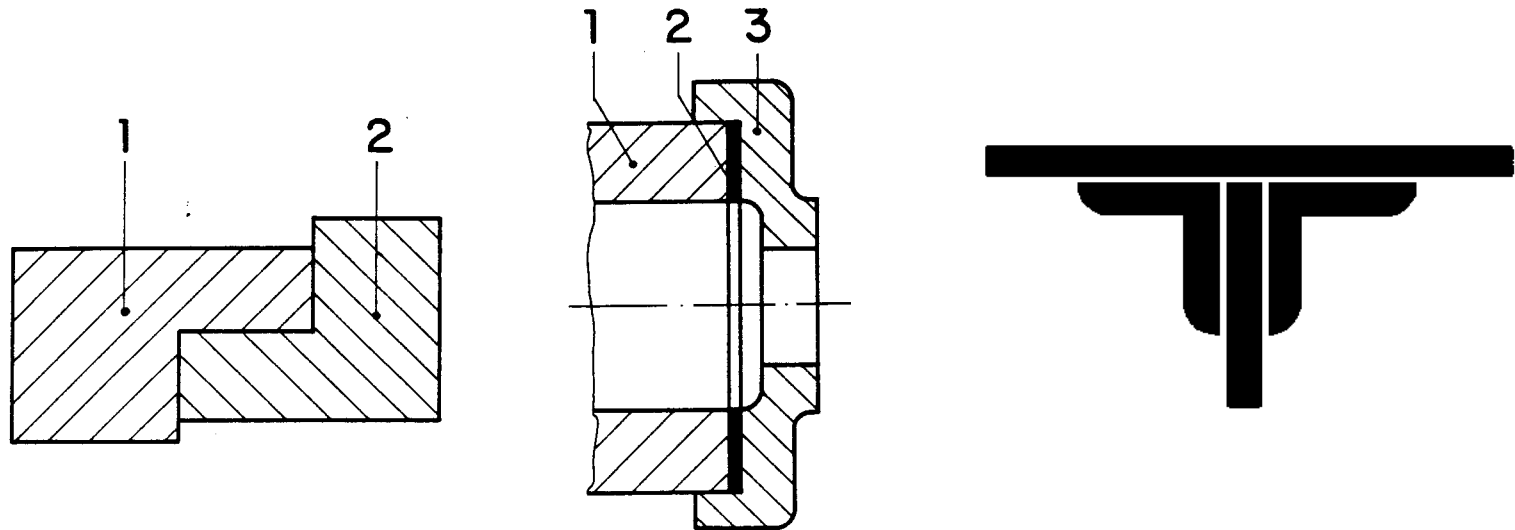
Plásticos, borrachas
e betuminosos
(verde-claro)

Imagens: Silva, A. et al. Desenho Técnico Moderno, 2. ed., 2006.

HACHURAS

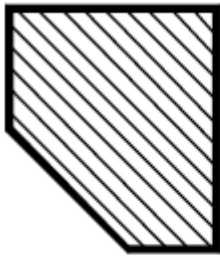
As hachuras em uma peça composta (unidas ou montagem), são feitas em direções diferentes.

Cortes em componentes de paredes muito delgadas, como por exemplo: chapas, juntas, guarnições, perfis estruturais, devem ser representados em negrito com espaçamento em branco.

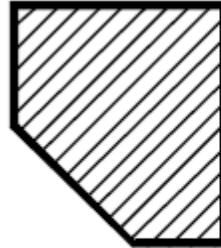


HACHURAS

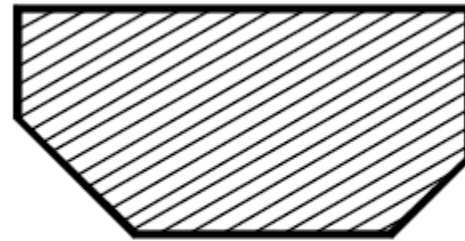
As hachuras não devem ter a mesma inclinação de arestas das peças, nem das cotas. Também não devem interceptar dimensões.



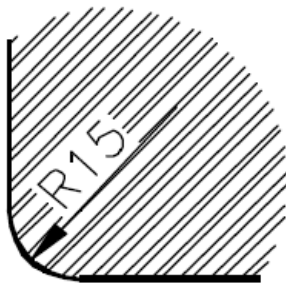
Errado



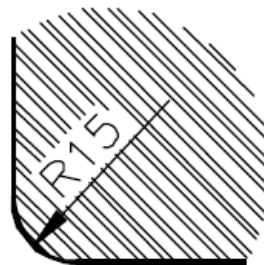
Correto



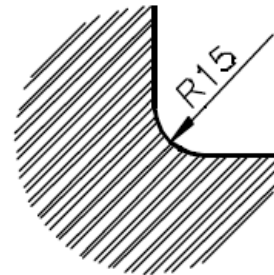
Correto



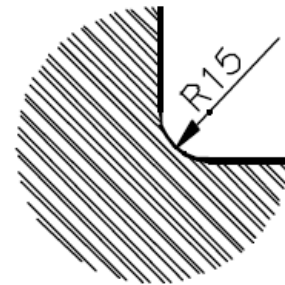
Errado



Correto



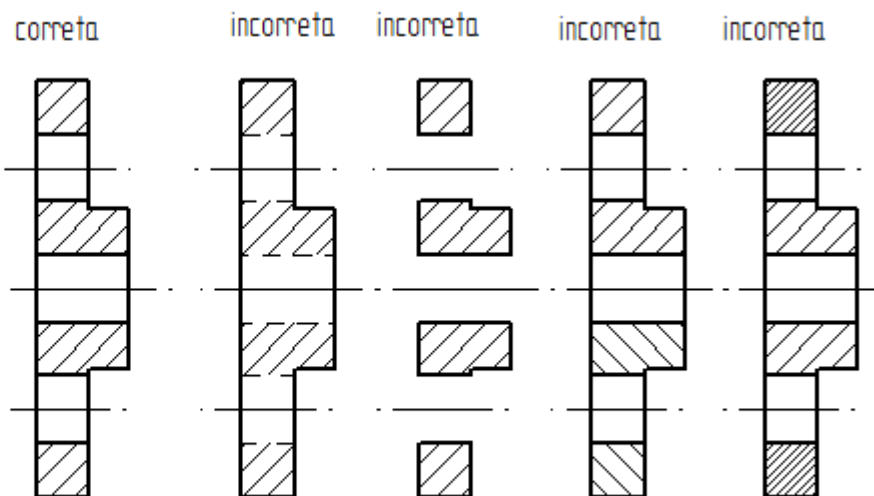
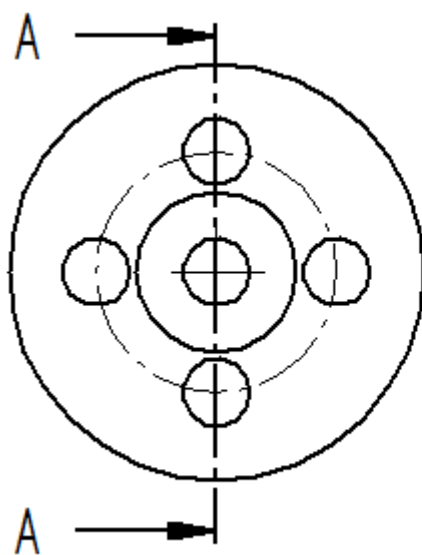
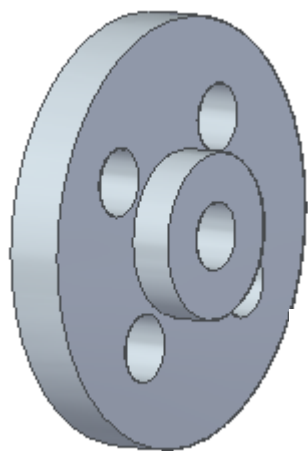
Errado



Correto

Imagens: Vale, Frederico A. M. do. Desenho de Máquinas. 2004/02.

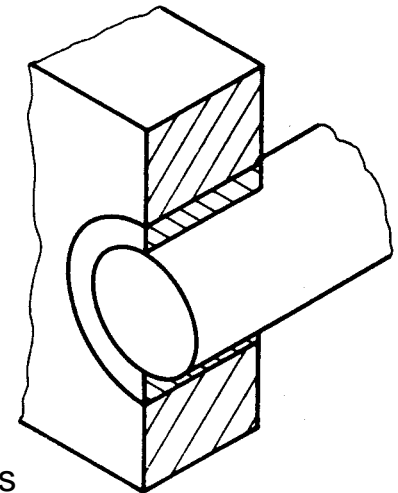
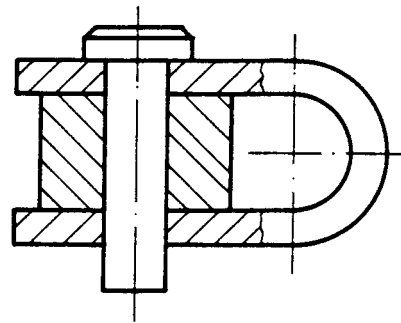
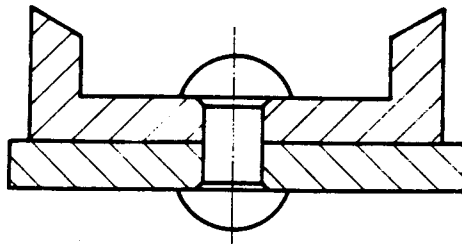
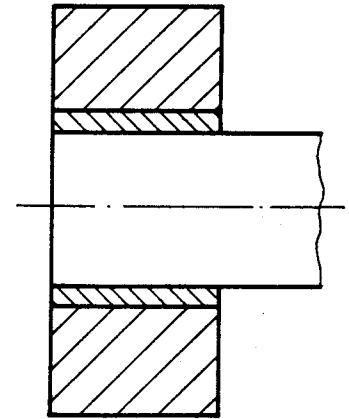
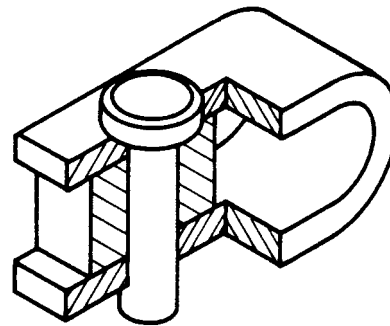
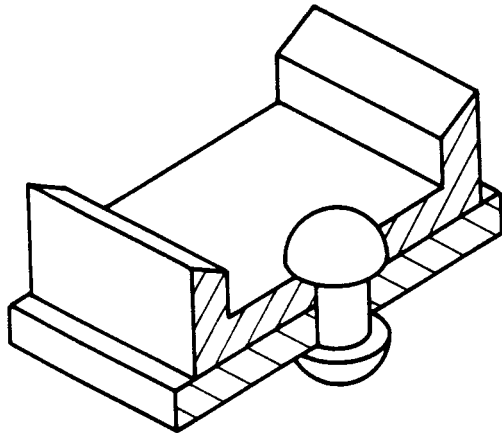
CORTE



Corte AA

ELEMENTOS NÃO CORTADOS

Alguns elementos de máquinas não são cortados quando atingido pelo plano secante.

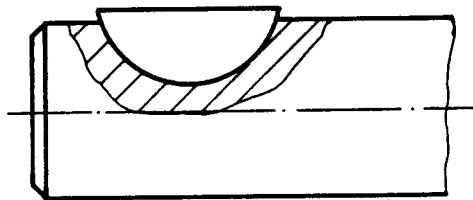
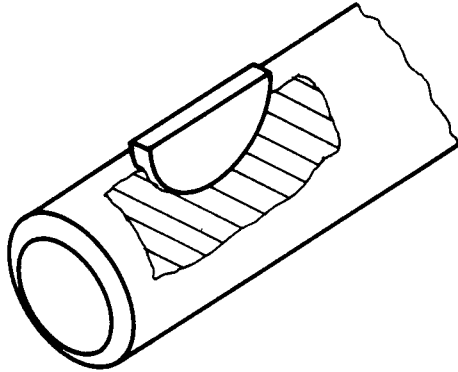


Rebites

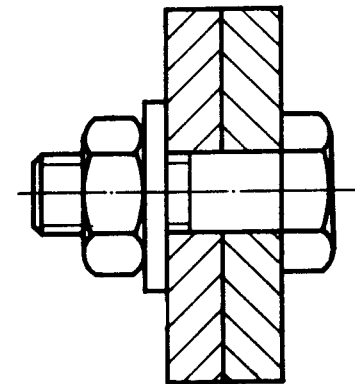
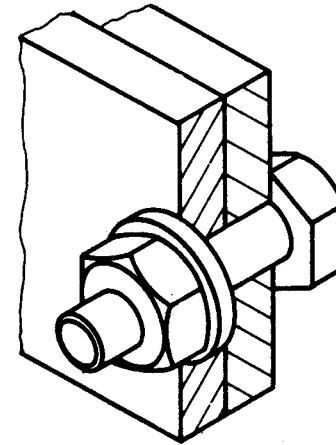
Pinos

Eixos

ELEMENTOS NÃO CORTADOS

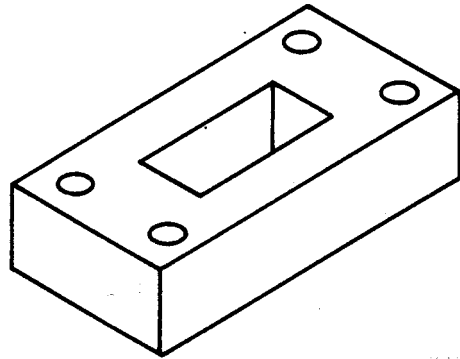


Chavetas

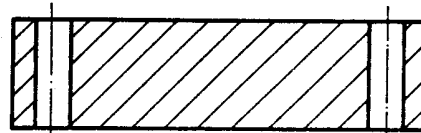


Parafusos, porcas e arruelas

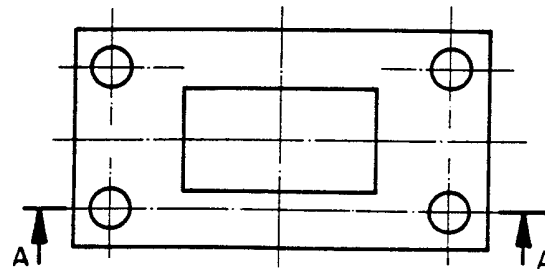
CORTE: plano secante



Pelos furos



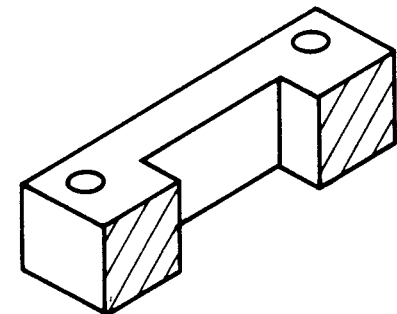
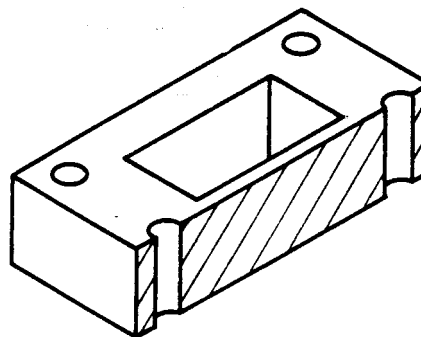
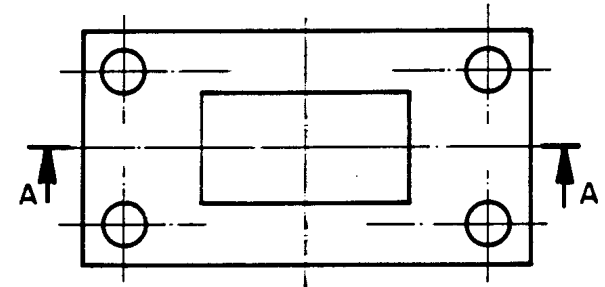
Corte AA



Pelos centro

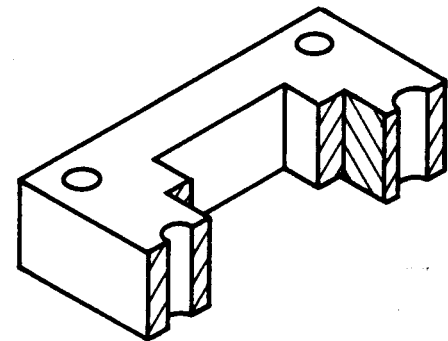
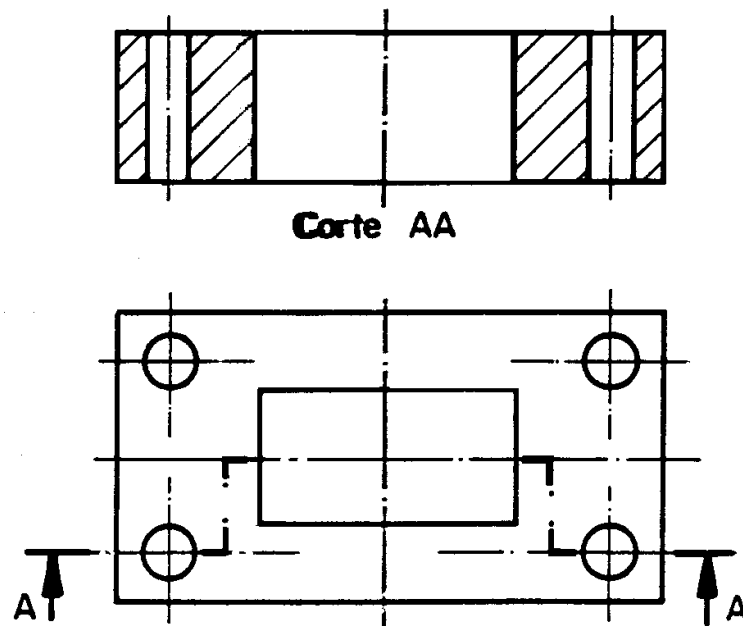


Corte AA



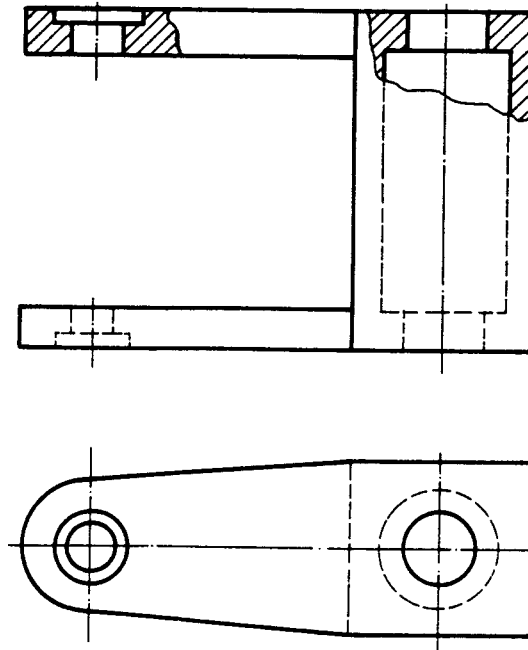
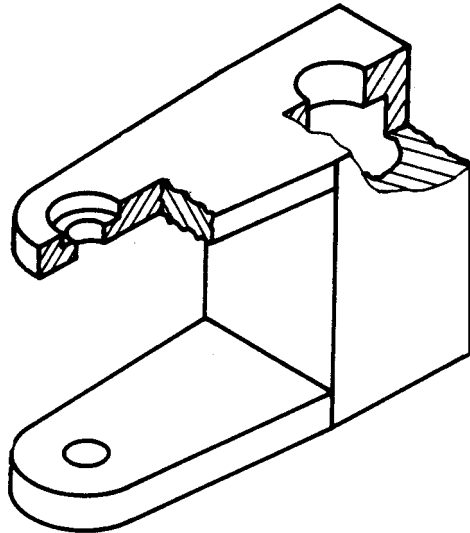
CORTE COMPOSTO (Em desvio)

Utilizado quando se deseja representar detalhes em diferentes planos de corte.



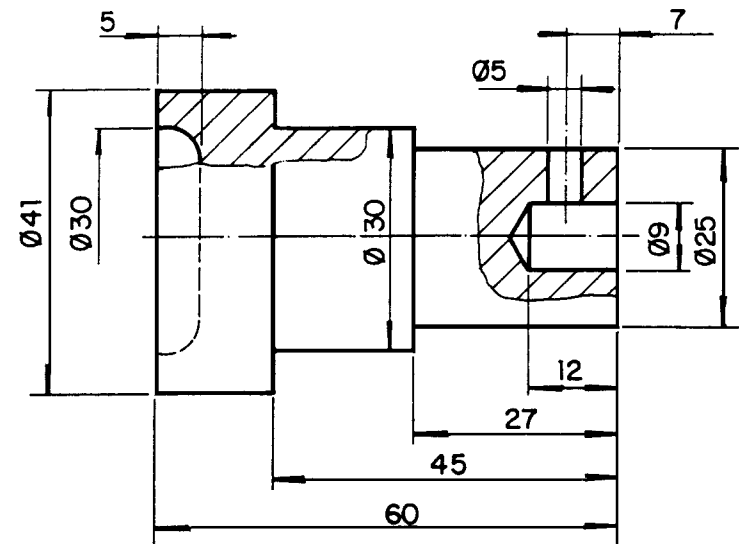
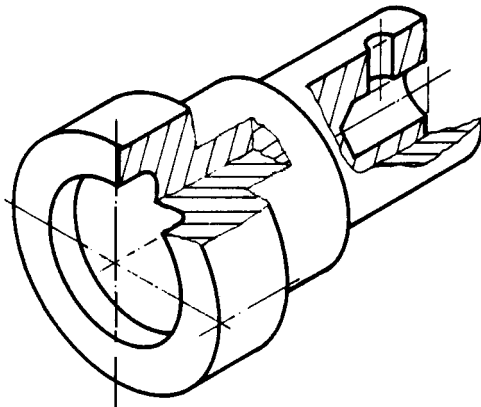
CORTE PARCIAL

É um corte utilizado apenas para mostrar determinados detalhes internos na projeção. Para limitar a parte cortada, usa-se a linha de ruptura (sinuosa estreita)



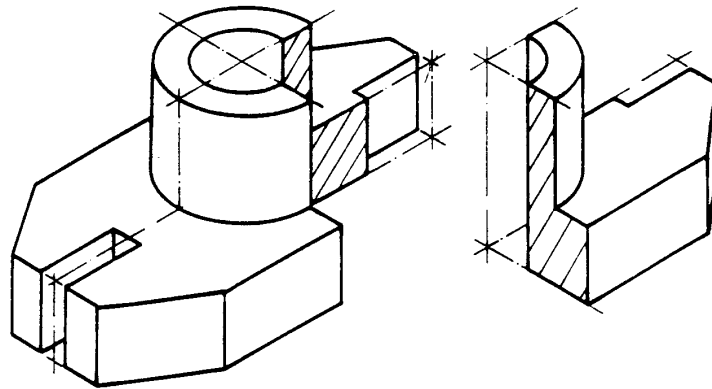
Fonte: Apostila Desenho Mecânico. Desenho com instrumentos. Convênio SENAI/São Paulo

CORTE PARCIAL



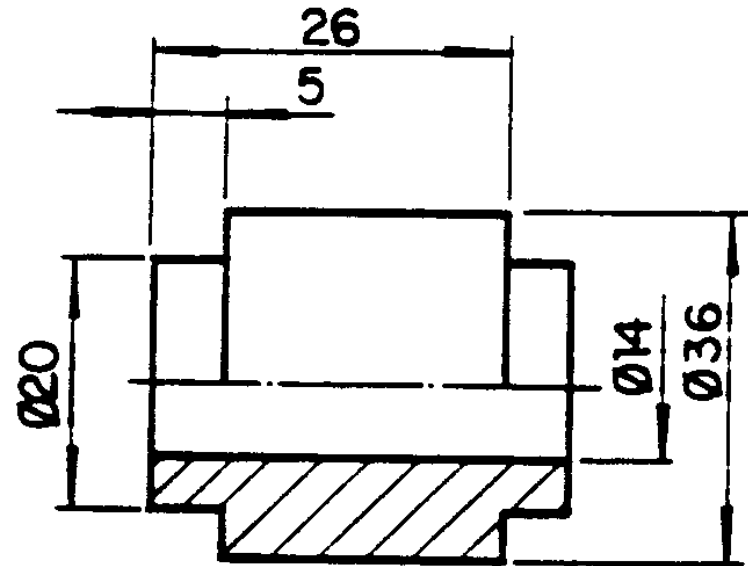
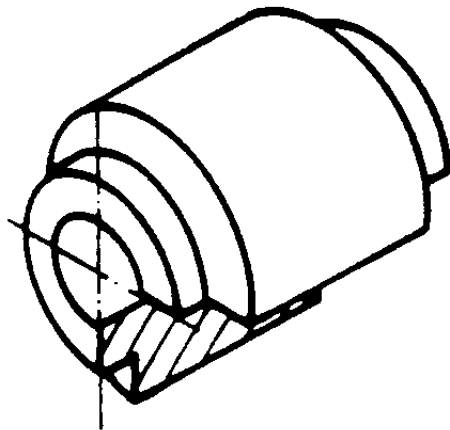
MEIO-CORTE

O meio-corte é empregado no desenho de peças simétricas, no qual aparece somente meia vista em corte. O meio corte apresenta a vantagem de indicar, em uma só vista, as partes internas e externa da peça.



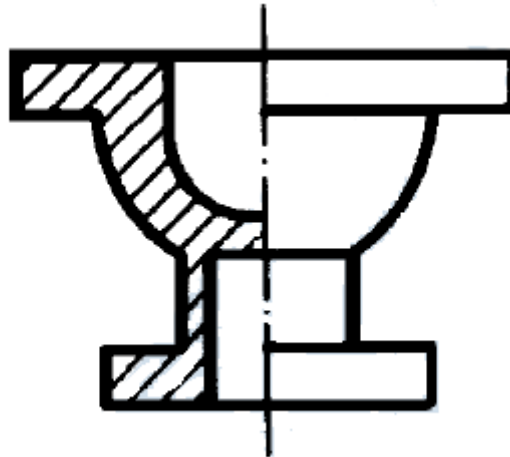
MEIO-CORTE em vista única

Em peças com a linha de simetria horizontal, o meio corte é representado na parte **INFERIOR** da linha de simetria.

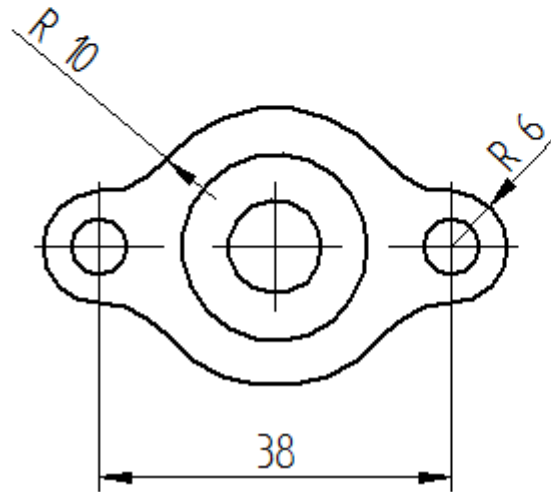
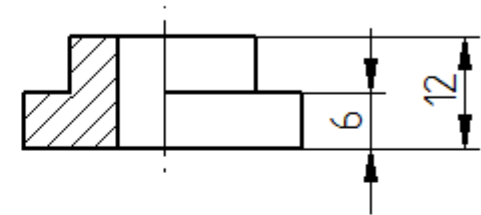
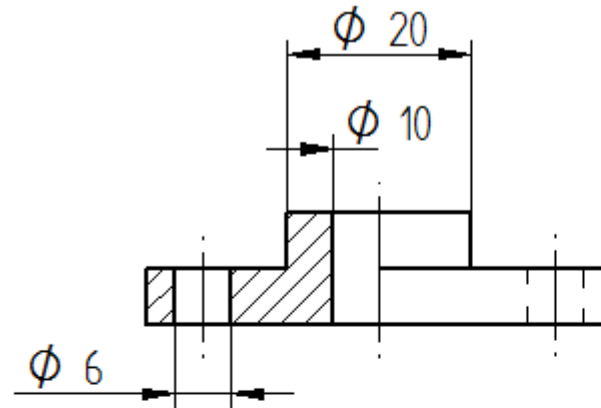
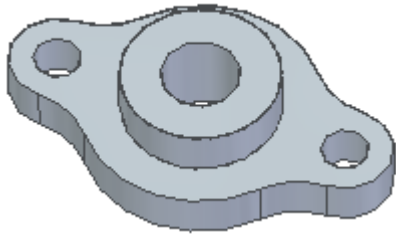


MEIO-CORTE

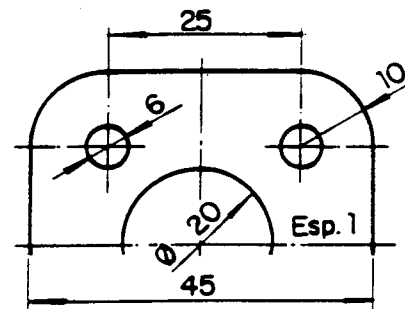
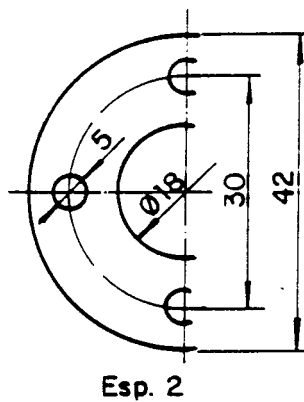
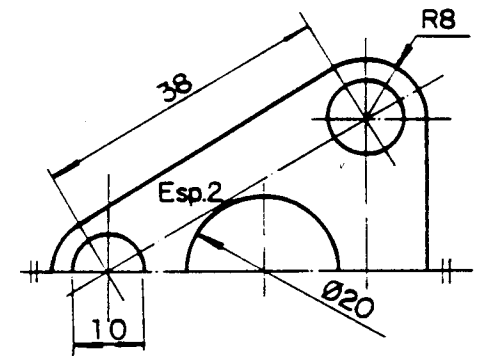
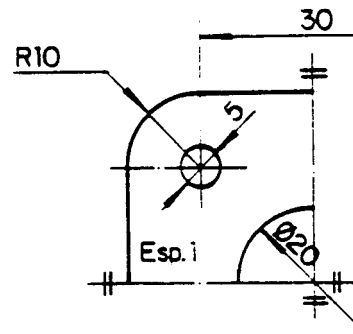
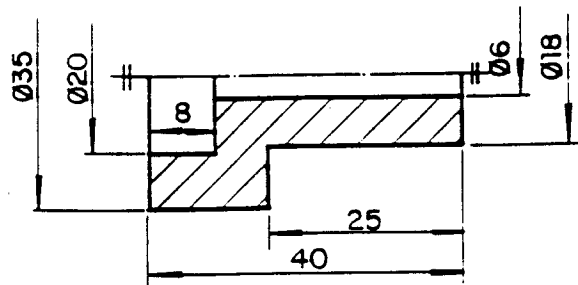
Em peças com a linha de simetria vertical, o meio corte é representado À
ESQUERDA da linha de simetria.



MEIO-CORTE - Duas representações em meio corte no mesmo desenho



MEIO-CORTE representação simplificada de peças simétricas







Exercício 4.1 – Complete

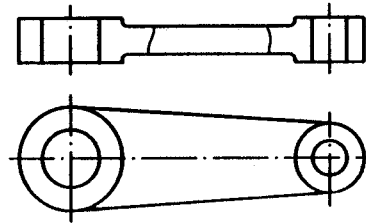
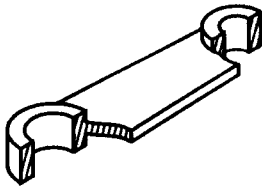
Assinale com um X as linhas usadas em desenhos técnicos mecânicos para indicar cortes parciais:

Nome: _____

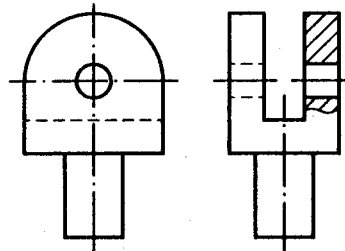
Nº _____ Turma _____

- a) () 
- b) () 
- c) () 
- d) () 

Analise a perspectiva e faça hachuras, no desenho técnico, nas partes maciças atingidas pelos cortes parciais.



Analise as vistas ortográficas e assinale com um X o tipo de material usado na produção da peça correspondente.

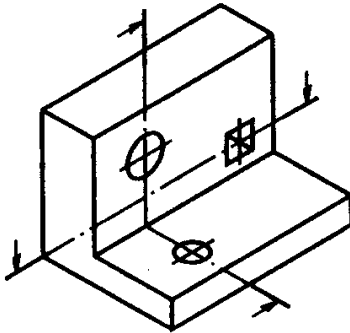


- a) () metal
- b) () plástico
- c) () cerâmica
- d) () madeira

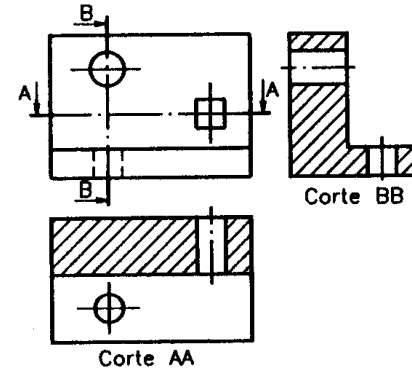
Exercício 4.2 – Assinale com X as vistas ortográficas em corte que correspondam ao modelo em perspectiva com a indicação de dois planos de corte.

Nome: _____

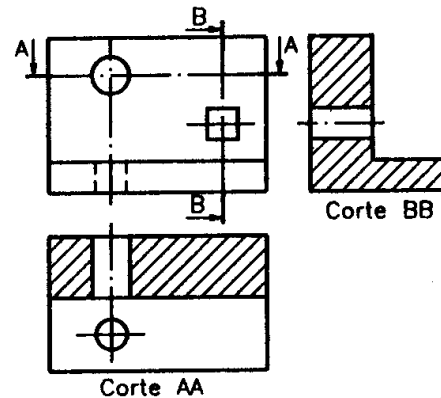
Nº _____ Turma _____



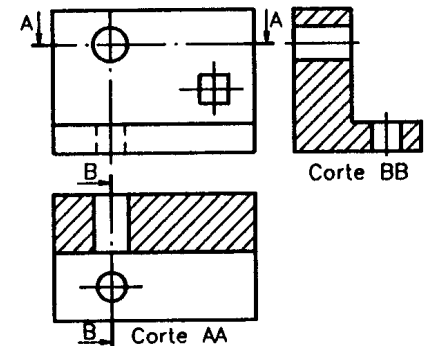
a) ()



b) ()



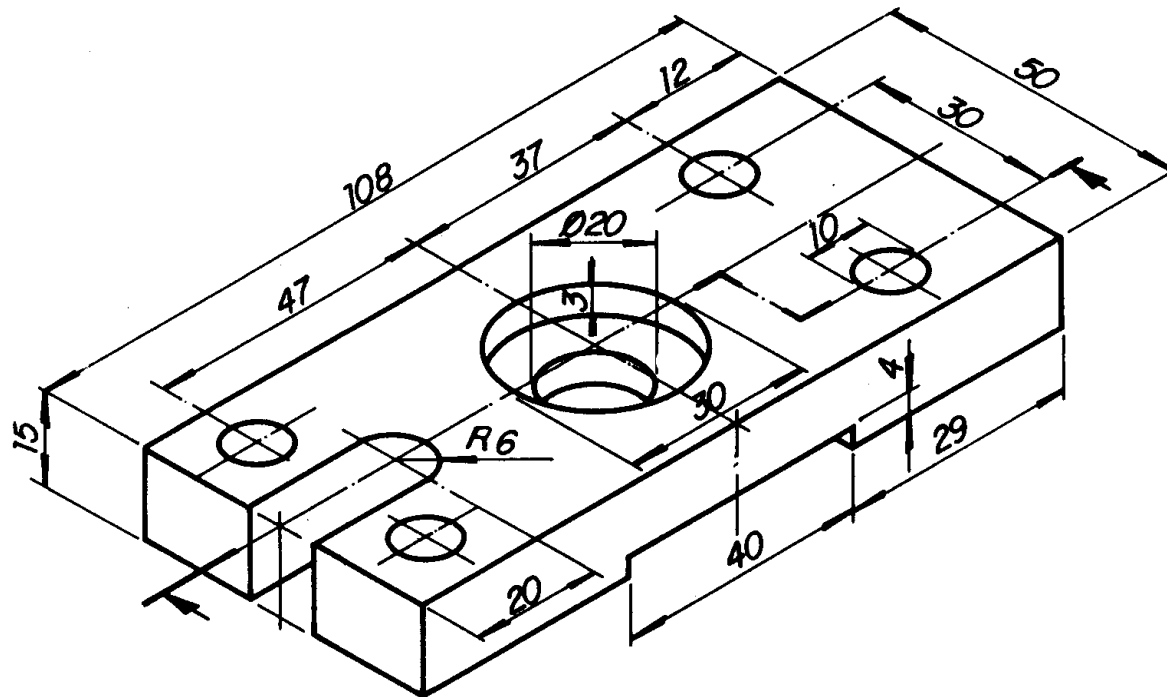
c) ()



Exercício 4.3 – Faça o croqui da peça abaixo. Decida e indique os planos de corte.

Nome: _____

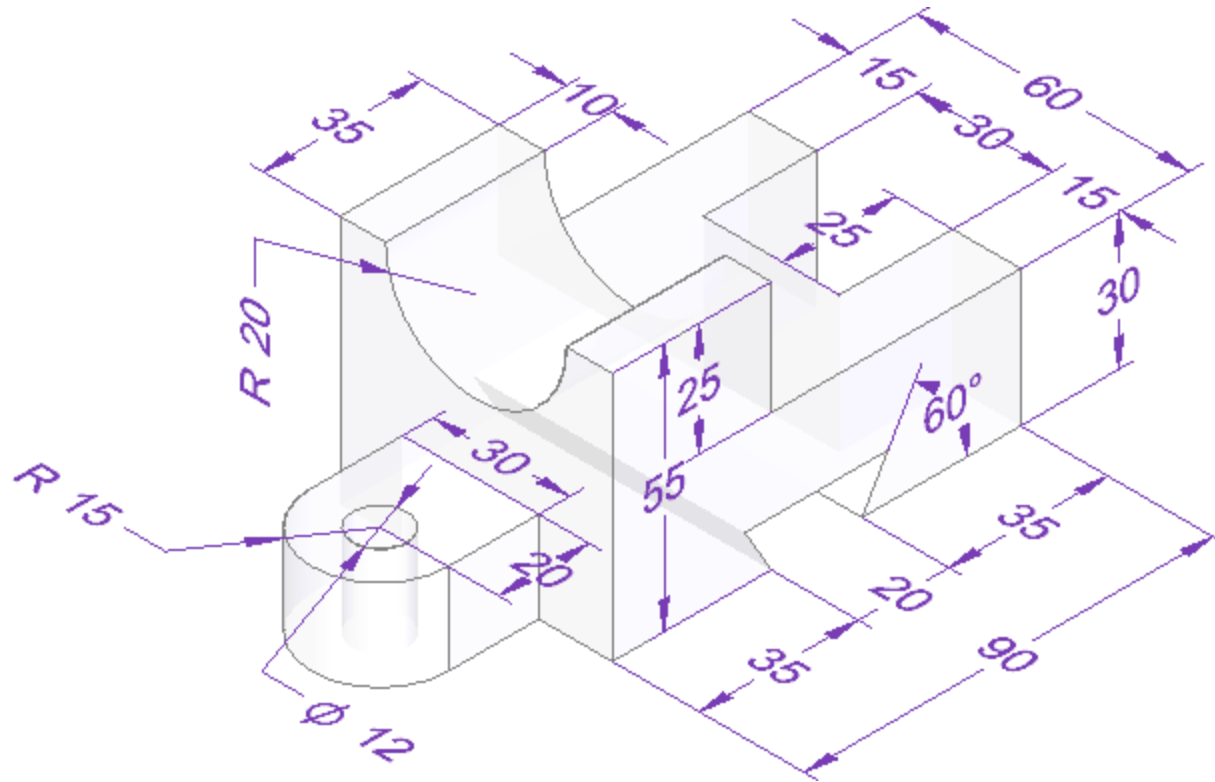
Nº _____ Turma _____



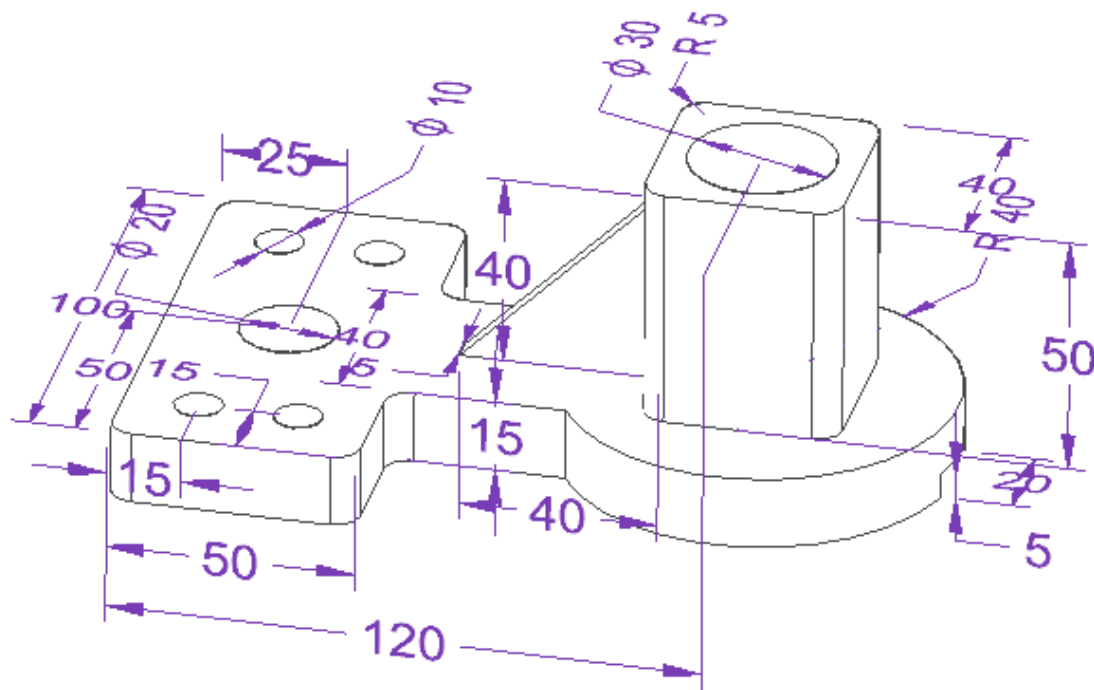
Exercício 4.4 – Faça o croqui das vistas necessárias da peça abaixo. Decida e indique o plano de corte.

Nome: _____

Nº _____ Turma _____



Exercício 4.3 – Faça o croqui da peça abaixo. Decida e indique os planos de corte.



Exercício 4.3 – Faça o desenho definitivo das peças abaixo. Decida e indique os planos de corte.

